CLAIMS

1. A method for improving the antimicrobial activity of a polymer derived from acrolein monomer wherein the polymer has been oxidized in air to form an oxidised acrolein polymer comprising carboxyl groups, said method comprising:

providing a solution of the oxidized acrolein polymer comprising carboxyl groups in a mixture containing water and a hydroxylic solvent including an alcohol selected from the group consisting of polyols, polyethylene glycols and alkanols; and

heating the solution at a temperature in the range of from 40 to 150°C for a period sufficient to improve the antimicrobial activity of the acrolein polymer.

2. A method according to claim 1 wherein said oxidised polymer comprising carboxyl groups is formed by a method of heating a solid acrolein polymer in air at an elevated temperature to form carboxyl groups.

3. A method according to claim 2 wherein said acrolein polymer comprising carboxyl groups has been formed by heating in air at a temperature between 80°C and 100°C.

4. A method according to claim 2 wherein the acrolein polymer comprising carboxyl groups has been formed by heating in air at a temperature of about 85°C.

5. A method according to claim 1 wherein the pH of the solvent is in the range of from 7 to 9.

6. A method according to claim 1 wherein the pH of the solvent is about 8.

7. A method according to claim 2 or claim 3 wherein the solvent includes an alkali selected from an alkali hydroxide, alkali carbonate and mixtures thereof.

8. A method according to claim 2 or claim 3 wherein the alkali is sodium hydroxide, sodium carbonate or mixture thereof.

9. A method according to claim 1, characterised in that the solution is heated in the range of 40 to 115°C.

10. A method according to claim 1, characterised in that the solution is heated in the range of 70-115°C.

11. A method according to claim 9 wherein the solution is heated to about 100°C.

12. A method according to any one of claims 1 to 3, characterised in that the solution is heated for a period of between 1 to 1,400 hours, thereby increasing antimicrobial activity of the polymers.

13. A method according to any one of the preceding claims, characterised in that the solution is heated for a period in the range of from 4 to 60 hours.

14. A method according to claim 11, characterized in that the hydroxylic solvent is polyethylene glycol and is present in the solution in an amount of between 50 and 99% by weight of the solution.

15. A method according to claim 14, characterized in that polyethylene glycol is present in the solution in an amount of between 64 and 95% by weight of the solution.

16. A method according to any one of the preceding claims, characterized by the addition of base or alkali to the polymers before and/or during heating, thereby enhancing the antimicrobial activity of the polymers.

17. A method according to any one of the preceding claims, characterised in that the release of free acrolein monomer by the acrolein polymer is reduced.

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18. An antimicrobial compound or composition prepared by the method of any one of the preceding claims.

19. A preservative disinfectant or antiseptic or composition prepared wholly or in part by the method of any one of claims 1 to 16.